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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,905	05/12/2006	Norio Uemura	108179-00056	5024

4372 7590 01/26/2009

ARENT FOX LLP
1050 CONNECTICUT AVENUE, N.W.
SUITE 400
WASHINGTON, DC 20036

EXAMINER	
BASKIN, JEREMY S	
ART UNIT	PAPER NUMBER
4137	

NOTIFICATION DATE	DELIVERY MODE
01/26/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com
IPMatters@arentfox.com
Patent_Mail@arentfox.com

Office Action Summary	Application No.	Applicant(s)	
	10/578,905	UEMURA ET AL.	
	Examiner	Art Unit	
	Jeremy S. Baskin	4137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) *2-4 and 6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/12/2006, 12/16/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. **Claims 2-4 and 6** are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 20 November 2008.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,538,645 to Perach (Perach) in view of US Patent No 4,606,705 to Parekh (Parekh).

In Reference to Claim 1

Perach teaches:

A capacity control valve (110) comprising:

a solenoid portion (122);

a tube (138) placed in said solenoid portion;

a movable core (128), wherein said moveable core forms a slide surface (97) and a non-contact surface (96 via Gr) on the outer diameter surface, wherein said slide surface is fitted to said tube (col. 5, lines 2-6), wherein the diameter of said non-contact surface is formed smaller than the diameter of said slide surface (col. 5, lines 2-6), wherein the axial length of said slide surface is formed shorter than the axial length of said non-contact surface (Figure 2);

a solenoid rod portion (174), wherein said solenoid rod portion is coupled to said movable core (col. 4, lines 25-26) and forms a joint surface (90) on the free end portion of said solenoid rod portion placed opposite to said movable core (Figure 2);

a fixed core (146), wherein said fixed core forms an inner bore (148) and is placed in an opposing manner against said movable core (Figure 2), the inner bore loosely fitted to said solenoid rod portion (Figure 2); and

an actuation rod (below 90), wherein said actuation rod forms an abutting face (at 90) and a valve body (166), the abutting face being engaged with said joint surface (90) of said solenoid rod portion (174), the valve body (166) opening or closing a control fluid passage hole (164). Perach fails to teach:

wherein either one of said joint surface of said solenoid rod portion or said abutting face of said actuation rod is formed a concave cone-shape surface while the other is formed a convex cone-shape portion.

Parekh discloses a variable displacement compressor control valve. In Figure 3, Parekh teaches wherein either one of said joint surface of said solenoid rod portion (34) or said abutting face of said actuation rod (37) is formed a concave cone-shape surface (37) while the other is formed a convex cone-shape portion (34).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate a cone shaped male/female connection between the solenoid rod and actuation rod within a fluid control valve. The motivation to combine relies on the need to perpetuate a desired linear force between two rod members while maintaining proper alignment.

In Reference to Claim 5

Perach teaches a capacity control valve according to Claim 1 (see the rejection of Claim 1 above), wherein the slide surface (97) is placed on the end portion of said outer diameter surface of said movable core (see Figure 2) and the axial length of the slide surface is not more than one quarter of the total length of the outer diameter surface (see Figure 2).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. **Henville (US 4,835,426)** uses a cone-shaped male/female connection between a solenoid rod and an actuation rod.

b. **Taguchi (US Re. 35,672)** uses a cone-shaped male/female connection between a solenoid rod and an actuation rod.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy S. Baskin whose telephone number is (571)270-7421. The examiner can normally be reached on Monday through Friday, 7:30AM to 5:00PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Bomberg can be reached on (571) 272-4922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S. B./
Examiner, Art Unit 4137

/Kenneth Bomberg/
Supervisory Patent Examiner, Art Unit 4137